

years 1837 and 1838, amounted to £1,462,800. The land would have been totally unproductive without irrigation. In this last instance the rental paid to the government in two years more than covered the cost of the original outlay. There is an annual balance of revenue over expenditure of £167,136. The area irrigated is 351,501 acres.

The author quoted copiously from Colonel Baird Smith's work on "Irrigation and Drainage in Italy, and also India," and from a return by Major Baker on similar questions.

ART. XXVIII.—*On a Genus of Coleoptera hitherto unfound in Victoria*.*—By WILLIAM HENRY ARCHER, Esq.

[Read 16th May, 1864.]

I beg to introduce to your notice this evening an interesting specimen of a beetle, which, as far as I can at present learn, has been hitherto unrecognised within the limits of Victoria. I obtained it from the neighbourhood of the St. Arnaud silver mines, where it was found under an old log, with about a dozen others of varying size, by the Director of the mines, whom I had requested to look out for Natural History objects. When I received them, they were in a small tin canister. Some were dead, and had become offensive. The survivors I found proceeding deliberately to eat each other; and to put an end to this Kilkenny-cat process, I gave them all a protecting *quietus*. The specimen before you is two and a-half inches in length, and about three-quarters of an inch in breadth, a size for a beetle which may well be termed gigantic. From its structure, you will perceive that it has powers of attack and defence of a most formidable character.

My friend, the accomplished naturalist, Count Castlenau, or, as he is quoted authoritatively in scientific writings, M. Laporte, states that: "This beautiful insect belongs to the order *Coleoptera*, to the family *Carabidæ*, and to the tribe *Morionidæ*." It was first described by Schrebers in the "Transactions of the Linnæan Society," under the name of *Scarites Schræatteri*. Count de Castlenau, curiously enough, years ago, in his "Etudes Entomologiques," separated it from the *Scarites*, and established it as a separate genus, under the name of *Hyperion*. Since then, *Bois-duval*, in

* See Note in Proceedings.

his "Entomological Fauna of Oceanica," has formed on the same insect his genus *Heteroscelis*; and Mr. Westwood, in his "Arcana Entomologica," changed that name, already employed for a genus of *Hemiptera*, and called it *Campylocnemis*, in allusion to the singular character of the hind tibiae, namely, that of being curved.

Castlenau's generic name, being the oldest, should be retained; and I therefore introduce it to you this evening as the *Hyperion Schrættleri*.

The Count tells me this insect is very rare in collections. It has been figured by Schrebers, Castlenau, and Westwood. The few specimens previously known were from the eastern parts of New South Wales. Both Count Castlenau and Dr. Godfrey Howitt consider the discovery of this insect in Victoria as a zoological fact of considerable interest, especially as, by its size and remarkable form, it belongs to a tropical fauna.

I trust, that, now it is known to exist in this country, many will be on the look-out for it. It has considerable pecuniary value, and can always be exchanged for first-class specimens of other *Coleoptera* in any part of the world.

ART. XXIX.—*Surface and Underground Drainage of Melbourne.* By ALEXANDER K. SMITH, Esq., C.E., F.R.S.S.A., &c.

[Read 16th May, 1864.]

In bringing this subject before the Royal Society, I at once admit that, though the Surface Drainage is of less importance to the inhabitants of Melbourne than the Underground Sewerage, at the same time the information contained in this paper will materially assist the proper consideration of the best mode to be adopted in carrying out the latter at the least expense.

The chief objections to the present open drains or channels in the streets are, first: That they become the recipients of the sewage from houses, the overflow of cesspools, &c., which they convey through the public streets, and in the largest quantity where the population is most dense, and the traffic greatest, to the prejudice of the comfort and health of the inhabitants.

The second objection is, that the street channels, especially in Elizabeth and Swanston-streets, are filled to overflowing